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*conica*. The results are different from those of IKENO in regard to the blepharoplast and centrosome. He finds no centrosome in the mitoses preceding the mother cell of the spermatid, and believes that his failure to find one is due to the absence of such a structure and not to any defect in technique. Two blepharoplasts were observed first in the mother cell of the spermatid near the plasma membrane, far from the nucleus. ESCOYEZ does not consider the blepharoplast to be a true centrosome; yet he has not traced its origin, and whether it comes from within the nucleus or from a certain region of the cytoplasm is not settled.—S. YAMANOUCHI.

**Sorus of Dipteris.**—MISS ARMOUR<sup>40</sup> has studied material of *Dipteris* that included the younger stages of the sporangium. *D. bifurcata* showed simultaneous development of sporangia in the sorus, and *D. conjugata* sporangia of different ages. The former, therefore, conforms to BOWER's "Simplices," and the latter to his "Mixtae." The three species seem to make a series in the form of the leaf, with *D. bifurcata* as the most primitive, and *D. quinquefurcata* in an intermediate position; parallel with this is the division of sori, leading to increase in their number and decrease in the number of sporangia in a sorus; and finally there is the progression from the "Simplices" type to the "Mixtae" type. This series is thought to have progressed from such a type as *Matonia*.—J. M. C.

**Morphology of Symplocarpus.**—ROSENDAHL has investigated the embryo sac and embryo of *Symplocarpus*, and an abstract of his results has been published.<sup>41</sup> The primordia of the flowers appear eighteen to twenty months before anthesis, the ovules being "formed" in the season (autumn) preceding pollination. The proembryo is of the massive type characteristic of the aroids, in this case becoming ovoid in form. There is a short suspensor, and the stem tip is organized in a groove of the proembryo which develops near the suspensor. The endosperm encroaches upon both integuments and even into the chalazal tissue; and in turn the massive proembryo ("protocorm") destroys the endosperm, so that finally the embryo is freely exposed in the cavity of the ovary.—J. M. C.

**Proteases.**—VINES, in his fifth paper on this subject,<sup>42</sup> reports that oily seeds, those of hemp in particular, contain proteolytic enzymes which act vigorously without restraint from the oil present. He succeeded in isolating, for the first time from plant tissues, "a protease that is essentially peptic in its properties, digesting fibrin to albumose or peptone, but not acting on albumose or peptone, whether produced by its own digestion of fibrin or added as Witte-peptone. The facts justify the conclusion that the hemp seed contains two proteases, the one a

<sup>40</sup> ARMOUR, HELEN M., On the sorus of *Dipteris*. *New Phytologist* **6**:238-244. *figs. 11-14*. 1907.

<sup>41</sup> ROSENDAHL, C. O., Embryo sac development and embryology of *Symplocarpus joetidus*. *Science*, N. S. **27**:209. 1908.

<sup>42</sup> VINES, S. H., The proteases of plants. V. *Annals of Botany* **22**:103-113. 1908.